UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/004,079	11/27/2001	Frederick Kiremidjian	SS-709-11	2726

7590 08/05/2005	EXAMINER
LAW OFFICES OF THOMAS E. SCHATZEL	AHMED, SALMAN

ART UNIT	PAPER NUMBER
2666	

LAW OFFICES OF THOMAS E. SCHATZEL
A Professional Corporation
Suite 240
16400 Lark Avenue
Los Gatos, CA 95032-2547

DATE MAILED: 08/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

		Application No.	**Applicant(s)**
Office Action Summary		10/004,079	KIREMIDJIAN ET AL.
		Examiner	**Art Unit**	
		Salman Ahmed	2666	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>27 November 2001</u>.

2a)☐ This action is **FINAL.**   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *1-3 and 7* is/are allowed.

6)☒ Claim(s) *11-13* is/are rejected.

7)☒ Claim(s) *4-6 and 8-10* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>27 November 2001</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

        1.☐ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____.

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Specification

1.   The disclosure is objected to because of the following informalities'.

Page 8, line 29, the docket number such as (Docket SS-709-07) should be deleted.

Page 8 line 30 the serial number such as (09/xxx,xxx) should be replaced with an actual

U.S. Patent application serial number.

Page 8 line 32 the docket number such as (Docket SS-709-08) should be deleted.

Page 9 line 1 the serial number such as (09/xxx,xxx) should be replaced with an actual

U.S. Patent application serial number.

Appropriate correction is required.

Claim Objections

2.   Claims 4, 5, 6 and 8 are objected to because of the following informalities:

Claim 4, l ine 18, "said network" should be changed to ---said hierarchical network--

Claim 5, line 32, "said network" should be changed to ---said hierarchical network—

Claim 6 line 8, "said network" should be changed to --said hierarchical network--

Claim 8, line 20, "said network" should be changed to --said hierarchical network—

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

4.   Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Amplify.Net's "Solution for DSL Distributed IP Service Management", in view of

Patel et al. (U.S. Patent No. 6,865,185 B1), hereinafter referred to as Patel and further

in view of Hinderks et al. (US PAT PUB 2002/0097728), hereinafter referred to as

Hinderks.

Regarding claim 11, Amplify.Net's "Solution for DSL Distributed IP Service

Management" discloses a network management system, comprising: a variable-depth

queue comprising individual entries related to data packets circulating through network,

and further related to all network nodes through which each must pass (page 11 section

"Class-based queuing"), and a traffic-shaping cell (page 11 section "Trafficshaping

Algorithm") providing for an inspection of each one of said individual entries and for

outputting a single decision whether to pass through or buffer each of data packets in all

network nodes through which each must pass; wherein, means data packets in a buffer

are delayed to enforce said service-level policy.

Regarding claim 11, Amplify.Net's "Solution for DSL Distributed IP Service Management" does not specifically point out to use a protocol processor providing for header inspection of data packets circulating through a network and providing for an information output comprising at least one of source Ip-address, destination Ip-address, port number, and application type; and a classifier connected to receive said information output and able to associate a particular data packet with a particular network node and a corresponding service-level policy bandwidth allowance.

Regarding claim 11, Patel discloses a protocol processor providing for header inspection of data packets circulating through a network and providing for an information output comprising at least one of source Ip-address, destination Ip-address, port number, and application type (inherently done when inserting labels or tags) in front of the data packets, Col. 2, lines 7-13), a classifier connected to retrieve said information output and able to associate a particular data packet with a particular network node and a corresponding service-level policy bandwidth allowance (Col. 2, lines 25-44).

Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to include using a protocol processor providing for header inspection of data packets circulating through a network and providing for an information output comprising at least one of source IP-address, destination Ip-address, port number, and application type; and a classifier connected to retrieve said information output and able to associate a particular data packet with a particular network node and

a corresponding service-level policy bandwidth allowance as taught by Patel et al. in the

assembly of Amplify.net in order to complete an efficient network management system.

Regarding claim 11, Amplify.Net's "Solution for DSL Distributed IP Service anagement"

and Patel disclose a network management system with a protocol processor, a

classifier, a variable depth queue and a traffic shaping cell.

Regarding claim 11, Amplify.Net's "Solution for DSL Distributed IP Service

management" and Patel do not teach a network management system with a replicator

for duplicating data packets in a multicast stream for each enrolled subscriber, and able

to expand the variable-depth queue with expanded multicast entries.

Regarding claim 11, Hinderks teaches (page 8 section 0078) the function of MPR

(multicast packet replicator) is to make a copy of an IP multicast packet that arrives via

input path from a multicast source. Basically, MPR performs the various multicast

system functions (such as outlined for example by publication RFC 2236) such as

processing multicast joins, leaves, queries and reports.

It would have been obvious to one having ordinary skill in the art at the time the

invention was made to modify Amplify.Net and Patel's teaching by incorporating

Hinderks teaching of a replicator in the network management system. The motivation is

that (Hinderks, page 3 sections 0026 and section 0028) the method and apparatus of

replication provides control over the access of each content recipient with respect to specific multicast channels (i.e., enable/disable access control capabilities) and provides for advertisements (or other regional/locally generated specific content) to be inserted directly into received IP multicast content streams in a way that is transparent to multicast recipients/subscribers and does not require special software or additional storage on the recipient's receiving equipment (e.g., home computer).

Regarding claim 12, in addition to the 103 rejection for claim 11 as stated above, Amplify.Net's "Solution for DSL Distributed IP Service Management" further discloses an output scheduler and marker for identifying particular ones of the individual entries in the single queue that are to be passed through or buffer (Page 11, section "Class-based Queuing" and "Traïcshapping Algorithms).

5. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over (Amplify.net's "Solution for DSL Distributed IP Service Management", in view of Patel, in view of Hinderks, as applied to claim 11 above), and in view of Everdell et al. (U.S. Patent Application No. 20020165961), hereinafter referred to as Everdell.

Regarding claims 13, Amplify.Net, Patel and Hinderks (as stated above in 103(a) rejection for claim 11) teach a management system having a protocol processor, a classifier, replicator and traffic shaping cell.

Regarding claims 13, Amplify.Net, Patel and Hinderks do not teach having at least one of the protocol processor, classifier, and traffic-shaping cell, being implemented as a semiconductor intellectual property and operate at run-time with the single queue.

However, the use of semiconductor intellectual property to perform the above functions is well known in the art, Everdell teaches the use of a traffic management chips to perform upper level traffic management within the network device (inherently a semiconductor intellectual property; (0709)).

Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to modify Amplify.Net, Patel and Hinderks' teaching by incorporating Everdell's teaching of at least one of the protocol processor, classifier, and traffic-shaping cell, being implemented as a semiconductor intellectual property and operate at run-time with the single queue. The motivation is that semiconductor chip or system on chip (SOC) handling a process is inherently faster than a software process.

Allowable Subject Matter

6.   Claims 4, 5, 6 and 8 would be allowable if rewritten or amended to overcome the

rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

7.   Claims 1-3 and 7 are allowed. Claim 9 and 10 would be allowable if objection to

claim 8 as mentioned above is corrected

Reason for Allowance

8.   The following is an examiner's statement of reasons for allowance: The instant

application claims a multicast network management method, comprising the steps of:

generating a packet-tracking queue with individual entries representing data packets for

transfer through a hierarchical network; storing an actual multicast data packet and its

real payload in a first-in, first-out (FIFO) buffer; expanding any packet-tracking queue

entry representing a multicast data packet into several consecutive entries, one each for

the individual subscribers enrolled to receive a broadcast, and wherein, each expanded

entry is subject to its own unique bandwidth-allocating service-level policy; flagging a

first of such expanded entries as being first, and flagging a last such expanded entry as

being last; and releasing and clearing said data packets in any order, and if the first or

last are released, then the next or previous are marked as first or last; wherein,

individually delayed releases of duplicated multicast data packets enforce a bandwidth

limiting function of any service-level policies involved.

The prior arts alone or in combination fail to jointly suggest or teach the claimed combination of features as taught by the instant application. The prior arts do not specifically teach a multicast network management method, comprising the steps of: generating a packet-tracking queue with individual entries representing data packets for transfer through a hierarchical network; storing an actual multicast data packet and its real payload in a first-in, first-out (FIFO) buffer; expanding any packet-tracking queue entry representing a multicast data packet into several consecutive entries, one each for the individual subscribers enrolled to receive a broadcast, and wherein, each expanded entry is subject to its own unique bandwidth-allocating service-level policy; flagging a first of such expanded entries as being first, and flagging a last such expanded entry as being last; and releasing and clearing said data packets in any order, and if the first or last are released, then the next or previous are marked as first or last; wherein, individually delayed releases of duplicated multicast data packets enforce a bandwidth limiting function of any service-level policies involved.

Citation of Relevant Prior Art

9.   The prior arts made of record and not relied upon are considered pertinent to applicant's disclosure.

The prior art Wong (US PAT 6570883) teaches a packet scheduling system for a packet switching network, which supports quality of service features including real-time priority, bandwidth reservation and excess bandwidth sharing. A dual frame approach

is used to control the bandwidth distribution among multiple traffic flows. Each traffic

flow is temporarily stored in a first-in-first-out queue first. Among backlogged flow

queues with available bandwidth credits, packets in the higher real-time priority flow

queues are always transmitted before packets in the lower real-time priority flow

queues.

The prior art St. John (US PAT 6917591) teaches methods systems and

computer program products for allocating excess and deficit bandwidth among a

plurality of queues in a multiple access system. Each of the plurality of queues is

associated with a quality of service and has a corresponding quantum value. An

available quantum value based on a total amount of committed bandwidth on a

downstream channel and a total amount of bandwidth on the downstream channel. The

quantum values of each of the plurality of queues are updated by an update quantum

value corresponding to respective ones of the plurality of queues. The update quantum

values are based on the available quantum value, a total reserved quantum value

corresponding to packets enquired in the plurality of queues for an update period and

the quality of service associated with the respective queue.

The prior art Oba et al. (US PAT 6262986) teaches a packet scheduling scheme

capable of realizing a fair scheduling regardless of weights of connections. A packet

scheduler has a plurality of packet queues for temporarily storing entered packets, to

each of which a weight is set up; a packet input unit for entering packets into the packet

queues; a scheduling information management unit for managing scheduling information for specifying an order to read out packets stored in the packet queues, according to a queue length of each packet queue and the weight set up for each packet queue; and a packet output unit for reading out and outputting desired packets from the packet queues according to the scheduling information. In a case of fixed length packets, the scheduling information management unit always holds as many scheduling information corresponding to one packet queue as a smaller one the queue length of that one packet queue and the weight set for that one packet queue, so as to make a processing time required for scheduling constant regardless of a number of connections.

Conclusion

10.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Salman Ahmed whose telephone number is (571)272-8307. The examiner can normally be reached on 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on (571)272-3174. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

Salman Ahmed
Examiner
Art Unit 2666

SA

CANG TON
PRIMARY EXAMINER